



## Library-free methylation sequencing with bisulfite padlock probes.

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## **Public Summary:**

Targeted quantification of DNA methylation allows for interrogation of the most informative loci across many samples quickly and cost-effectively. Here we report improved bisulfite padlock probes (BSPPs) with a design algorithm to generate efficient padlock probes, a library-free protocol that dramatically reduces sample-preparation cost and time and is compatible with automation, and an efficient bioinformatics pipeline to accurately obtain both methylation levels and genotypes from sequencing of bisulfite-converted DNA.

## **Scientific Abstract:**

Targeted quantification of DNA methylation allows for interrogation of the most informative loci across many samples quickly and cost-effectively. Here we report improved bisulfite padlock probes (BSPPs) with a design algorithm to generate efficient padlock probes, a library-free protocol that dramatically reduces sample-preparation cost and time and is compatible with automation, and an efficient bioinformatics pipeline to accurately obtain both methylation levels and genotypes from sequencing of bisulfite-converted DNA.

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